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| 10/806,675      | 03/23/2004  | Pei-Chung Wang       | GP-303624           | 1150             |

7590

02/15/2006

KATHRYN A MARRA  
General Motors Corporation  
Legal Staff, Mail Code 482-C23-B21  
P.O. Box 300  
Detroit, MI 48265-3000

EXAMINER

SHAW, CLIFFORD C

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/806,675

Applicant(s)

WANG ET AL.

Examiner

Clifford C. Shaw

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**Detailed Action**

1.) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.) Claims 1-4 and 9-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Independent claims 1 and 9 call for a method of forming a droplet on a metal wire electrode and separating the droplet in a globular transfer mode using a particular pulse waveform. The specification does not describe this method in such a way as to enable an artisan of ordinary skill to make and use the invention. The only mention of “globular transfer” in the specification occurs in paragraph 005 wherein the term is defined: “In a globular mode of metal transfer, the current density is controlled so that a relatively large drop of molten metal forms at the end of the electrode wire, and the drop hangs on the tip for a small fraction of a second until the force of gravity exceeds the surface tension retaining the drop and it falls into the molten metal deposit”. In paragraph 007 of his specification, applicant discusses the metal transfer achieved with his pulse waveform. This transfer is characterized by a current pulse portion that enhances drop formation followed by a shorter, but greater pulse to affect drop separation. It is not seen that applicant’s improved transfer can be considered “globular” in the conventional use of that term. Applicant’s improved

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transfer does not rely on gravitational forces to affect droplet separation as in globular transfer. The droplet sizes produced by applicant's improved method are relatively small (see paragraph 24 of the specification), not the "relatively large" drops called for in the definition of globular transfer. Because applicant's specification does not describe globular transfer as being produced by his improved waveform and because it would appear that globular transfer is not the same as the improved transfer described by applicant, the claims specifying globular transfer are considered to be based on a non-enabling specification. The dependent claims are inadequate under 35USC112 in that they depend from claims 1 and 9.

3.) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4.) Claims 1-4 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese document no. JP61-115680A supplemented by a newly provided English translation. The pulse waveforms in figures 1 and 8 of the Japanese document no. JP61-115680A and the discussion at pages 2-6 of the English translation of the Japanese document disclose a method of welding wherein a molten drop is transferred using a pulse waveform corresponding to that claimed. The claims differ from the Japanese document no. JP61-115680A in calling for a globular transfer mode and in calling for particular pulse waveform parameters. These differences do not patentably distinguish over the prior art. As discussed in the rejection

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under 35USC112 above, it is not clear how applicant's improved waveform can lead to globular transfer. Whatever applicant intends by the term "globular transfer" in his claim, it is considered obvious that this transfer mode is achieved by the method of the Japanese document no. JP61-115680A because the Japanese method uses a similar waveform as applicant for similar reasons. In regard to the particular pulse parameters in the dependent claims, it would have been obvious to have adjusted the pulse parameters in the method of the Japanese document no. JP61-115680A to correspond to the claimed values, the motivation being to adjust these parameters for optimal results in a particular welding situation.

5.) Applicant's "Remarks" in the amendment filed on 9/22/2005 have been given careful consideration, but are not persuasive of patentability. A new ground of rejection has been made under 35USC112, set forth above. Applicant's claim amendments are deemed to distinguish over the rejections based on the British Document GB2171267A, and these rejections have been withdrawn. Applicant's comments concerning the Japanese document no. JP61-115680A are not persuasive. Applicant argues that the Japanese document no. JP61-115680A discloses a short circuiting transfer mode, on the basis of the content of figure 5. This argument is not correct. It is clear from the English translation of the Japanese document no. JP61-115680A that figure 5 shows an undesirable welding situation that can be avoided by using the waveforms in figures 1 and 8 to produce a droplet transfer as shown in figure 2. This droplet transfer is the same as applicant's disclosed transfer.

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Any inquiry concerning this communication should be directed to Clifford C Shaw at telephone number 571-272-1182. The examiner can normally be reached on Monday through Friday of the first week of the pay period and on Tuesday through Friday of the second week of the pay period.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas G. Dunn, can be reached at 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Clifford C Shaw  
Primary Examiner  
Art Unit 1725

February 10, 2006